

CENTRAL INTELLIGENCE AGENCY

REPORT

INFORMATION REPORT

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COUNTRY East Germany

DATE DISTR. 17 November 1954

SUBJECT Development of the Antibiotic Xanthocillin

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1. Among the 1955 research projects of the Work Group (Arbeitsgruppe) for Crystal Structure Analysis in the East German Academy Institute for Medicine and Biology in Berlin-Dach, is a project concerning the structure of xanthocillin. This antibiotic was first discovered at the Friedrich Schiller University of Jena in 1943 and was produced in small amounts by VEB Arzneimittelwerk Dresden-Radebeul (former Madans & Company) from 1952 on. Since the researchers of that enterprise have not succeeded in clarifying the chemical composition and the structure of the new antibiotic, these questions have now been referred to the Academy Institute. Samples of the antibiotic were furnished to the Institute in August 1954. These samples were accompanied by the following description, furnished by the Dresden-Radebeul firm.

"Antibiotic Xanthocillin

- "1) Xanthocillin is a new antibiotic which is obtained in the form of yellow crystals from the mycelium of a special strain of penicillium notatum. The clarification of the chemical composition of this substance has not yet been completed
- "2) Xanthocillin is polyvalent, bacteriostatic and bactericide.
- "3) There is no acquisition of resistance.
- "4) The fact that pathogenic germs acquired resistance after clinical application of sulfonamides and antibiotics constitutes a serious and ever-increasing danger with regard to the reliable action of these medicaments. Experiments in vitro carried out in order to get various germs accustomed to xanthocillin through their daily treatment with xanthocillin doses have not succeeded. It is known that sulfonamides and penicillin provoke a several-fold increase of resistance starting between the sixth and the twelfth day if these medicaments are applied to hemolytic staphylococci. However, when xanthocillin was applied under the same conditions to the same germs no increase of resistance

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could be observed on the one hundredth day and thereafter. In addition, those germs which had become resistant with respect to sulfonamides and penicillin retained their sensitivity with respect to xanthocillin.

- "5) Xanthocillin is relatively hard to resolve. This quality from a certain point of view is a drawback with respect to the making of injections. On the other hand, this quality is an asset for focal therapeutics through slow resorption and natural depositing action.
- "6) Xanthocillin is resistant against chemicals to a large extent and it is thermo-stable. It can be heated to a temperature of 120° Centigrade for a whole hour without damage. The xanthocillin preparation stored for an indefinite time without deteriorating. It can be applied during a treatment with xanthocillin, as for example, infecting medicaments or chemo-therapeutics, no unfavorable influence on the antibiotic effect of xanthocillin was observed.
- "7) Clinical tests with xanthocillin have been made with 17,000 patients. It has been stated that all preparations of xanthocillin brought about good results. The curing action of this antibiotic is not due merely to its antibiotic qualities but also to the fact that it has wound-purifying qualities and that it furthers granulation.
- "8) The curing action of sulfonamides, penicillin and streptomycin is considerably increased if they are applied in conjunction with xanthocillin."

2.- The Dresden Institute has made available to the Institute an action spectrum of xanthocillin.

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